

# T6161-HB-FSE-010/TAK

0910-LP-100-3388

## TECHNICAL MANUAL ORGANIZATIONAL

### THAW CABINET, COSPOLICH MODULAR SHIPBOARD, MODEL THW30-2M-SN-MLR

#### INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

COSPOLICH REFRIGERATOR COMPANY, INC.  
DESTREHAN, LA 70047

CONTRACT: N0003-97-C-4005  
TAK-3016 ROY M. WHEAT



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## **Foreword**

This technical manual contains the Installation, Operation and Maintenance Instructions and Allowance Parts Listings for the Cospolich Modular Shipboard Thaw Cabinet, Model THW30-2M-SN-MLR used on LCPL ROY M. WHEAT. The Allowance Parts Listings (APL's) was added to the technical manual as Section 2. A Table of Contents was added to the manual to reflect the contents of the manual.



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**SECTION 1. MODULAR SHIPBOARD THAW CABINET INSTALLATION,  
OPERATION AND MAINTENANCE INSTRUCTIONS**

**SECTION 2. ALLOWANCE PARTS LISTINGS**



***TECHNICAL MANUAL***

***INSTALLATION, OPERATION AND  
MAINTENANCE INSTRUCTIONS***

***Modular Shipboard Thaw Cabinet  
Model: THW30-2M-SN-MLR***

***Cospolich Refrigerator Co., Inc.  
Norco, LA 70079 USA  
800-423-7761***





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## CHAPTER 1

### GENERAL INFORMATION

#### **1.1    *Introduction***

This technical manual provides information on the installation, operation, maintenance, and inspection of this unit manufactured by **Cospolich Refrigerator Co., Inc.**, Norco, Louisiana. A complete parts breakdown is provided.

#### **1.2    *Scope of the Manual***

This technical manual provides sufficient information for maintenance and installation of the equipment.

#### **1.3    *Equipment Description***

The unit consists of the following parts:

- a. *Storage Compartment* - The insulated thaw cabinet and food storage compartment is clear storage area. Included in this area are the storage pans.
- b. *Doors* - Access to the storage compartment is through two hinge insulated doors. The doors are fully "gasketed" to provide a tight seal.
- c. *Condensing Unit Compartment* - This area is located below the storage compartment and contains the condensing unit along with the necessary controls.
- d. *Air Handler* - The air handler is located in the storage compartment and is responsible for distributing the air associated with the thawing process.
- e. *Cabinet* - The cabinet is the enclosure in which all of the above items are housed.

#### **1.4    *Equipment Supplied***

The thaw cabinet is shipped from the factory fully assembled. The complete assembly is palletized and crated to minimize the possibility of damage in shipping and storage.



|                               |
|-------------------------------|
| TABLE 1.1 LEADING PARTICULARS |
|-------------------------------|

MANUFACTURER: Cospolich Refrigerator Co., Inc.  
Norco, Louisiana 70079

TYPE: Marine Refrigeration Unit  
Cospolich Model:

THW30-2M-SN-MLR

REFRIGERANT: 404A

PURPOSE: Safe Thawing of Frozen Food

ELECTRICAL  
REQUIREMENTS: Power Supply - 115 Volt AC, 1 Phase, 60 Hz

Operating Current:

8.3 Amps

Maximum Power Demand:

20 Amps

DRAIN  
REQUIREMENTS: None

WATER  
REQUIREMENTS: None

MISCELLANEOUS: Weight: (Approximate)  
Shipping:  
1,134 lbs.  
Operating:  
1,080 lbs.  
Volume:  
(Crated): 78 Cubic Feet



ELEVATION

VERTICAL SECTION

HORIZONTAL SECTION

[illegible]

Fabrication can proceed according to these specifications, except as noted:

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

|                       |                  |                  |        |
|-----------------------|------------------|------------------|--------|
| ITEM                  | THW30-2M-SN-MLR  |                  |        |
| PROJECT               | Standard Drawing | DWG #            | 50617  |
| DATE                  | 5/23/01          | SCALE            | N.T.S. |
| COSPOLICH             |                  | DWN. BY          | TR     |
| REFRIGERATOR CO. INC. |                  | NORCO, LOUISIANA |        |





## CHAPTER 2

### OPERATION

#### 2.1 Introduction

This model thawing cabinet is a heavy duty piece of equipment designed for continuous use in a shipboard environment. It is designed for continuous service and incorporates automatic controls to regulate the cycling of the refrigeration system.

#### 2.2 Controls and Indicators

|                                   |
|-----------------------------------|
| TABLE 2.1 CONTROLS AND INDICATORS |
|-----------------------------------|

| Name                          | Type                 | Function   |
|-------------------------------|----------------------|--|
| Thermostat                    | Contact Points       | Cycles the refrigeration system (automatic)                      |
| Suction Valve                 | Manual Plunger Valve | Isolate suction at the compressor                                |
| Discharge Valve               | Manual Plunger Valve | Isolate discharge line at receiver                               |
| Expansion Valve               | Manual Stem          | Regulates the flow of liquid refrigerant to the evaporator coil. |
| Defrost Timer                 | Contact Points       | Controls scheduled expansion coil defrosting                     |
| Evaporator Pressure Regulator | Needle Valve         | Regulates the flow of refrigerant                                |
| Solenoid Valve                | Automatic Plunger    | Shuts off the refrigerant flow                                   |
| Well Switch                   | Contact Points       | Activates the solenoid to bring the cold well on line            |



### 2.3 Start Up Procedure

The refrigeration system is completely factory-assembled, precharged, and ready for operation. To energize, connect electrical cord to power source and switch the control switch so that the storage pilot light on the panel comes on.

At the time the refrigeration system should begin operating and within minutes the temperature should start to drop.

The operating temperature in the storage mode is 38 degrees F. (+ or -2 degrees F.).

To initiate thaw process, turn the control switch so that the thaw pilot light comes on.

The system will function automatically and maintain the product after defrost at 38 degrees F (+ or -2 degrees F.)

|                                     |
|-------------------------------------|
| <b>TABLE 2.2 START UP PROCEDURE</b> |
|-------------------------------------|

| Operation  | Results   |
|--|---|
| 1. Activate system by inserting electrical service cord into electrical supply source and flip power control switch. | Compressor should immediately come on line along with the condenser fan and the evaporator fan.                   |
| 2. Locate liquid refrigerant indication glass mounted on the receiver.   | Once the system has been operating for two minutes, the glass should appear clear and full of liquid refrigerant. |
| 3. Wait 15 minutes.  | The temperature in the storage area should begin to approach the "green zone" indicating adequate operation.      |
| 4. Wait 3 hours.   | Once the operating temperature has been reached, stocking of the containment area can begin.                      |



## 2.4 Shutdown Procedures

|                                      |
|--------------------------------------|
| <b>TABLE 2.3 SHUT-DOWN PROCEDURE</b> |
|--------------------------------------|

| <i>Operation</i>   | <i>Results</i>  |
|--|---|
| 1. De-energize the system by flipping the power control switch "Off" and disconnecting the electrical supply cord. | Once the system is de-energized, the condenser fan and the evaporator fan will cease operation. |

### **WARNING:**

**PRIOR TO ANY CLEANING OF THE SYSTEM INVOLVING PLACING OF HANDS IN AREAS WITH MOVING PARTS, THE SYSTEM SHOULD BE DEACTIVATED BY DISCONNECTING THE POWER SUPPLY CORD.**

## 2.5 Preparation for an Extended Period of Inactivity

This model thaw cabinet is designed for continued use at automatically cycled intervals. In case of an extended shutdown, both the mechanical refrigeration system as well as the food storage compartment must be serviced.

|   |
|---|
| <b>TABLE 2.4 SHUT-DOWN PROCEDURES FOR EXTENDED PERIOD</b> |
|---|

| <i>Operation</i>                                    | <i>Results</i>   |
|---|--|
| 1. Fully close discharge valve at the receiver      | Compressor will pump liquid refrigerant from the system into receiver tank |
| 2. Fully close suction valve at the compressor      | This will isolate the refrigerant between the two valves.                  |
| 3. Disconnect Power Supply                          | De-energizes system  |
| 4. Clean and wipe dry the food storage compartment. | This will reduce the odor build-up during Shut down                        |



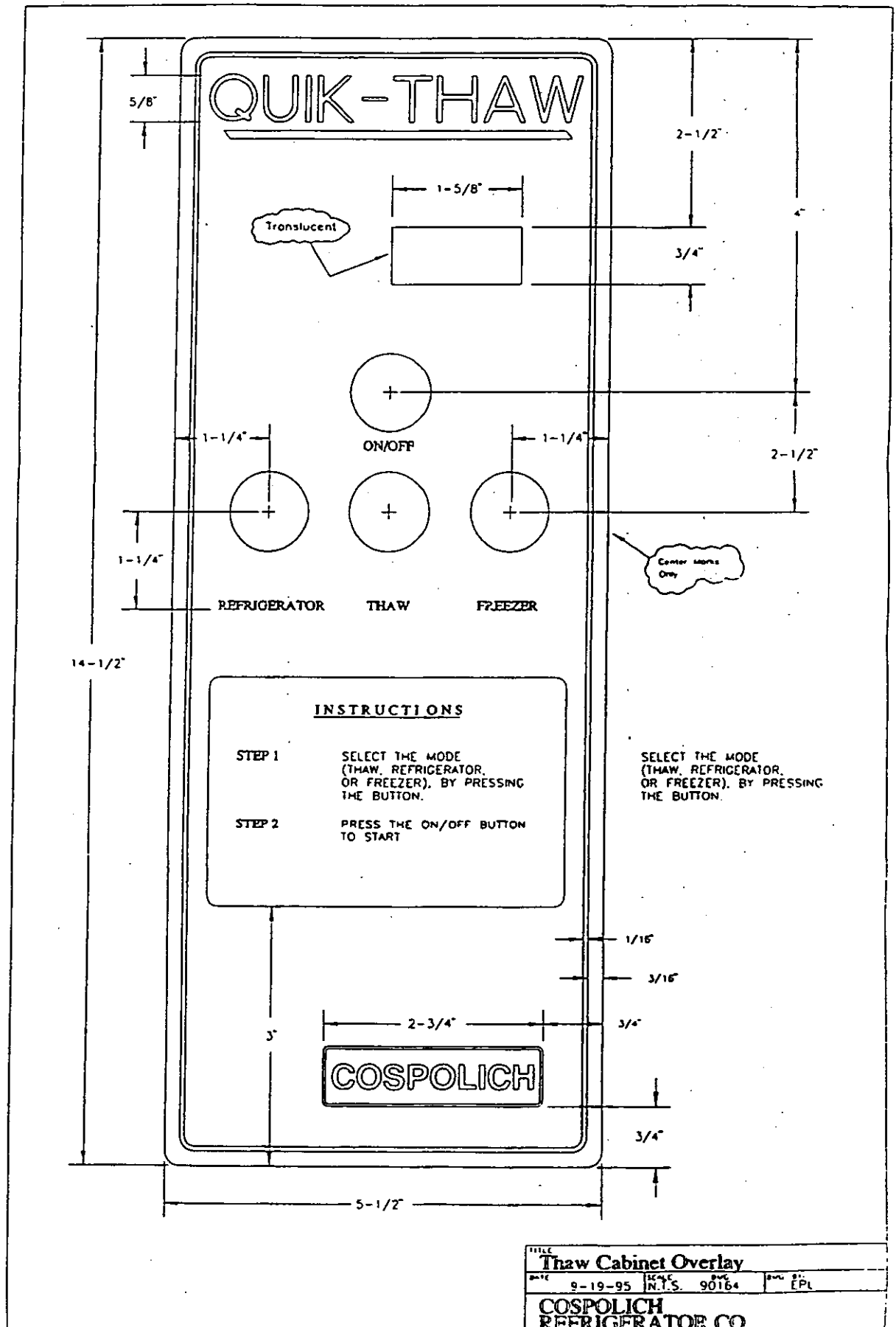


Figure 2.1





## CHAPTER 3

### FUNCTIONAL DESCRIPTION

#### 3.1 *System Description*

This model thaw cabinet is a self-contained, automatically controlled, continuous duty thawing and material storage system. It is designed with the intent and purpose of thawing frozen items.

The operating temperature is automatically monitored by a thermostat control switch that is factory set to maintain a predetermined adequate condition.

The equipment is installed in two basic compartment assemblies. They are:

- a. *Condensing Unit Compartment* - This area is located below the storage compartment and contains the condensing unit along with the necessary controls.
- b. *Storage Compartment* - This insulated food storage area is clear storage area. Included in this compartment is the adjustable shelving.

#### 3.2 *System Operation*

The thaw cabinet is designed for the storage of food products. Adequate spacing should be allowed between items to assure the circulation of air.

Special care in the initial loading of the storage compartment should be taken. It is suggested that the loading be scheduled in three equal portions allowing three hours between each loading.



## CHAPTER 4

### SCHEDULED MAINTENANCE

#### **4.1    *Introduction***

To insure the longest and most trouble free operation, a thorough periodic maintenance schedule is required. The maintenance system should be aimed at maximizing the efficient utilization of maintenance personnel, minimizing down time, and providing the orderly acquisition of spare parts support.

#### **4.2    *Preventive Maintenance Action Index***

To assist with the timely maintenance, a perpetual schedule of recommended procedures has been developed. These procedures cover weekly, monthly and annual schedules. Each aspect is covered in detail with explanation and instructions in Section 4.4. In addition, a Maintenance Index Table can be found in Table 4.1.

#### **4.3    *Preparation for Maintenance***

Since many areas affected in the maintenance schedule are electrically supplied, it is necessary to de-energize the system when making these inspections.

#### **4.4    *Maintenance Procedures***

##### **4.4.1    *Weekly Inspection***

- a. The unit should first be de-energized by switching the toggle switch that is located on the control panel in the condensing unit compartment to the “Off” position.

**Note:** It is necessary to first remove the front air grill by lifting it straight up, then moving the bottom out and down.

- b. Using a vacuum or small hand broom, brush the condenser coil in a vertical motion to remove any dust or debris that may have accumulated.



|   |
|---|
| TABLE 4.1 PREVENTIVE MAINTENANCE ACTION INDEX |
|---|

| Item | Frequency | Description   |
|------|-----------|---|
| 1.   | Weekly    | a. Inspect condenser coil to make certain that air flow is not hampered and that it is clear of dust and debris.  |
| 2.   | Monthly   | a. Inspect and clear drain line.<br>b. Check the liquid refrigerant sight glass to make certain that the system is fully charged.<br>c. Wipe down the interior liner with a mild soap and warm water solution. Be certain to dry thoroughly.<br>d. Check both the condenser fan motor and the evaporator motor to make certain that they are operational and that the fans are tight and secure.<br>e. Wipe door gaskets and breaker strips with a damp cloth.<br>f. Clean exterior with mild soap and warm water and dry thoroughly. |
| 3.   | Annually  | a. Slide condensing unit from compartment and check all joints and fittings for any signs of leaks or fatigue.<br>b. Inspect electrical connection to make certain that there is a good contact and that wires are neither weakened or frayed.<br>c. Check the integrity of the cabinet.  |



## CHAPTER 5

### TROUBLESHOOTING

This chapter will assist in a systematic check of components in determining any cause of equipment failure.

It will be necessary that the individual involved in the troubleshooting operation be familiar with the function of the equipment as described in Chapter 3.

The following table lists the most common symptoms that may be experienced and the recommended corrective action. The tables are separated into electrical maintenance, mechanical maintenance, and operators' actions.

|  |
|--|
| <b>TABLE 5.1 MECHANICAL AND ELECTRICAL TROUBLESHOOTING GUIDE</b> |
|--|

| Symptom                | Possible Failure   | Remedy  |
|------------------------|--|---|
| Unit does not operate  | 1. Control failure<br>2. Incorrect voltage<br>3. Failed compressor   | Adjust control or replace<br>Correct<br>Replace   |
| Unit runs continuously | 1. Low on refrigerant<br>2. Control failure<br>3. Bad connection at expansion valve<br>4. Restricted air flow or dirty<br>5. Bad condenser fan motor<br>6. Expansion valve stuck open<br>7. Compressor failure<br>8. Ineffective door seal<br>9. Circulation in storage restricted | Leak check system and recharge.<br>Adjust control or replace<br>Check and secure sensor bulb to suction line<br>Rectify air flow problem and clean condenser<br>Check and replace if necessary<br>Replace<br>Replace<br>Adjust door strike<br>Redistribute food for even air flow |





**TABLE 5.1 MECHANICAL AND ELECTRICAL TROUBLESHOOTING GUIDE**  
(Continued)

| Symptom            | Possible Failure                | Remedy  |
|--------------------|---------------------------------|---|
| Low head pressure  | 1. Defective compressor         | Replace   |
|                    | 2. Low refrigerant              | Leak check system and recharge                  |
|                    | 3. Ambient temperature too low  | Raise room temperature                          |
| High head pressure | 1. Blocked or dirty condenser   | Clean and remove any obstructions               |
|                    | 2. Ambient temperature too high | Lower room temperature                          |
|                    | 3. System contains air          | Evacuate, change the filter dryer, and recharge |
|                    | 4. Refrigerant overcharge       | Reduce refrigerant in the                       |
| Short cycling      | Maladjusted control             | Adjust control                                  |

**TABLE 5.2 OPERATORS' TROUBLESHOOTING GUIDE**

| Symptom            | Possible Failure                 | Remedy                       |
|--------------------|----------------------------------|------------------------------|
| Unit does not cool | 1. Blown fuse                    | Replace fuse                 |
|                    | 2. Bad connection at supply cord | Check supply cord at outlet  |
|                    | 3. Ill fitting gasket            | Tighten strike on door latch |



## CHAPTER 6

### CORRECTIVE MAINTENANCE

#### 6.1 *Introduction*

This chapter focuses on the instruction needed in the removal and replacement of certain components.

The level of skills required to perform the service or repair will vary. Some may require specific training. It is up to the individual and/or his supervisor to determine their capacity to undertake the particular task of service or repair.

It is also important to know that any procedure requiring the handling of refrigerant requires certification.

The service or repair items are limited to those listed in Chapter 7.

#### 6.2 *Repair Procedures*

**\*\*\*WARNING\*\*\***

**PRIOR TO PERFORMING ANY WORK ON THE REFRIGERATION SYSTEM, IT IS REQUIRED THAT THE UNIT BE DE-ENERGIZED.**

##### 6.2.1 *Replacement of Motor Compressor*

- a. Prior to beginning the change out of the compressor, it is first necessary to disconnect electrical power to the unit. This should be done by turning off the circuit in the main supply panel. It should be noted on the panel that the refrigerator is being serviced and the breaker must remain off.

- b. Bleed off entire refrigerant charge.

**Note: It is unlawful to vent any refrigerant into the atmosphere.**

- c. Remove the defective compressor and replace with new one.
- d. Attach refrigeration gauges.
- e. Install a new liquid line filter.
- f. Purge system and evacuate.
- g. Re-connect the electrical circuit and control.
- h. Recharge system with refrigerant.



### **6.2.2 Replacement of Controls**

- a. Disconnect unit from electrical service.
- b. Remove control cover and disconnect electrical terminals.
- c. Disconnect capillary tube.
- d. Remove mounting fasteners on control base and install new control by reversing the procedure.

### **6.2.3 Replacement of Expansion Valve**

- a. Shut liquid valve and run compressor until it pumps refrigerant into receiver (low side service gauge will read 0 pounds.) Close the suction line valve.
- b. Disconnect the sensor bulb on the suction line.
- c. Disconnect liquid line (1/4") and suction line (3/8"), then remove valve.
- d. Install new valve, reconnect lines and refasten sensor bulb.

*Note:* It is not recommended to adjust the valve super heat as this comes preset from the factory.

### **6.2.4 Replacement of Filter Dryer**

- a. Shut liquid valve and run compressor until it pumps refrigerant into receiver (low side service gauge will read 0 pounds.) Close the suction line valve.
- b. Remove filter dryer from system and replace with new dryer.
- c. Purge system and add refrigerant if needed.



### **6.2.5 *Charging Refrigeration System***

- a. Connect service gauges to the suction and discharge service valves, then open valves one full turn.
- b. If the system is pressurized slightly, open both manifold gauge valves and purge the service gauge lines.
- c. With manifold gauge valves closed, start up refrigeration system.
- d. Attach a drum of refrigerant to the suction service side of the manifold gauges and add refrigerant until the liquid sight glass is clear of bubbles.

### **6.2.6 *Removing and Replacing Air Handler Fan Motor***

Disconnect electrical power. Remove fasteners (2) on fan door and open. Disconnect electrical plug, then unbolt the fan bracket. Remove the motor from bracket and then the fan blade. Reverse steps to reinstall.

### **6.2.7 *Removing and Replacing Condenser Fan Motor***

- a. Disconnect all electrical power supply to cabinet.
- b. Remove the mounting bolts on the condensing unit base and slide the refrigeration assembly out.
- c. Remove protective shroud from around motor.
- d. Remove fan leads from junction box attached to the compressor.
- e. Remove screws and washers that attach the fan motor to bracket. Remove fan motor.
- f. Install new fan motor
- g. Reverse procedure to reassemble.

### **6.2.8 *Removing and Replacing Anti-Condensate Heater***

**Note:** The anti-condensate heater is located behind the front edge of the vinyl door opening breakers.

- a. Disconnect all electrical power supply to cabinet.
- b. Remove breakers by exerting pressure at the front edge toward the center of the door. Disconnect anti-condensate wiring connection under rail.
- c. Remove anti-condensate heater from recess in rail.





- d. Replace heater in rail and reconnect electrical.

#### **6.2.9 *Removing and Replacing Defrost Heater Elements***

**Note:** It is necessary to remove the pans in order to get into the air handler.

- a. Disconnect electrical power.
- b. Remove two mounting screws in door.
- c. Disconnect electrical heater element leads.
- d. Remove mounting screws on heater.
- e. Install new heater.
- f. Reconnect electrical.

#### **6.2.10 *Replacing Door Gasket***

**Note:** It is suggested that the door be removed from the cabinet and place face down on a work table.

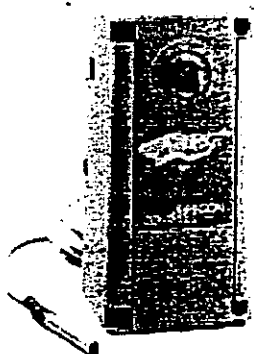
- a. Remove the fasteners and pull old gasket off of retainer.
- b. Clean gasket retainer and immediate area.
- c. Start new gasket into retainer. After gasket is positioned, replace fasteners.

**Caution:** Avoid cutting the gasket if possible.



## A319 Series

# Electronic Temperature Control



A319 Electronic Temperature Control

## Description

The A319 Series is a line voltage single-stage electronic temperature control with single-pole, double-throw relay output and LED indication. The A319 is designed with heating or cooling modes of operation, adjustable differential, and an interchangeable temperature sensor. The A319 couples electronic accuracy with remote sensing capability in a NEMA 1 high-impact plastic enclosure suitable for surface or DIN rail mounting.

## Features

- operates on 120 or 208/240 volts, which eliminates need for a separate transformer, saving installation time and cost
- electronic circuitry improves accuracy and provides higher reliability than equivalent electromechanical controls
- solid-state sensor handles remote sensing applications without the need for ambient compensation or other limitations of electromechanical temperature controls
- interchangeable temperature sensors and mounting accessories allow flexibility in application; increasing versatility and serviceability
- two models cover temperature ranges from -20 to 220°F (-30 to 105°C), reducing inventory by encompassing the temperature ranges required to support the majority of refrigeration and HVAC applications
- wide adjustable differential of 1 to 30°F (0.5 to 17°C) enables the user to match equipment cycle rate for a given application; maintains a tighter differential than typical electro-mechanical controls
- field-selectable mode jumpers work to control either heating or cooling equipment with LED indication of relay energization status

## Applications

The A319 can be used to control a wide variety of single-stage refrigeration or HVAC equipment. Typical applications include:

- frozen/refrigerated food cases
- compressor lockout
- beverage/milk coolers
- condenser fan cycling
- boiler control
- pump control (cooling towers)
- space and return-air temperature control
- immersion sensing for actuation of hot water and steam valves in heating applications

## To Order

Specify the code number from the following selection chart.

## Selection Chart

| Code Number   | Description   |
|---------------|---|
| A319ABC-12-01 | A319 Temperature Control with Sensor (100 to 200°F range) |
| A319ABC-24-01 | A319 Temperature Control with Sensor (-20 to 100°F range) |

## Accessories

| Code Number | Description   |
|-------------|---|
| TE-6300-608 | NTC Thermistor Sensor with 8 ft (2.4 m) leads                         |
| TE-6300-610 | NTC Thermistor Sensor with 12 ft (3.7 m) leads                        |
| TE-6341P-1  | Thermistor Sensor with Duct Insertion Mounting Hardware               |
| TE-6343P-1  | Thermistor Sensor with Outdoor Air Mounting Hardware                  |
| TE-6344P-1  | Thermistor Sensor with Wall Mounting Hardware                         |
| WEL11A-601R | Immersion Well for use with TE-6300-608, use with thermal compound    |
| BOX10A-600R | PVC Enclosure for Outdoor Mounting of TE-6300-608                     |
| SHL10A-603R | Sun Shield for use with TE-6300-608 and BOX10A-600R                   |
| ADP11A-600R | 1/2 in. dia. EMT Conduit Adapter (box of 10) for use with BOX10A-600R |
| BKT287-1R   | 35 x 7.5 mm, 0.305 m (12 in.) long DIN rail for use with A319         |
| BKT287-2R   | 35 x 7.5 mm, 0.914 m (36 in.) long Din rail for use with A319         |
| PLT344-1R   | End clamps, (2) for DIN rail mounting of A319 controls                |

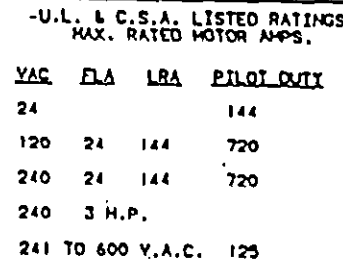
## Specifications

| A319 Electronic Temperature Control |   |  |                      |                      |
|-------------------------------------|---|--|----------------------|----------------------|
| Set Point                           | A319ABC-12-01 100 to 220°F (38 to 105°C)  |  |                      |                      |
| Range                               | A319ABC-24-01 -20 to 100°F (-30 to 38°C)  |  |                      |                      |
| Differential Range                  | 1 to 30°F (0.5 to 17°C)   |  |                      |                      |
| Input Voltage                       | 120 or 208/240 VAC, 50/60 Hz  |  |                      |                      |
| Current Draw                        | 1.8 VA  |  |                      |                      |
| Relay Electrical Ratings            | SPDT  | 120 V<br>N.O. (N.C.)   | 208 V<br>N.O. (N.C.) | 240 V<br>N.O. (N.C.) |
|                                     | Horsepower:   | 1 (0.25) hp  | 1 (0.33) hp          | 1 (0.5) hp           |
|                                     | Full Load Amps:   | 16 (5.8) A   | 9.2 (4.0) A          | 8.0 (4.9) A          |
|                                     | Locked Rotor Amps:  | 96 (34.8) A  | 55 (24) A            | 48 (29) A            |
|                                     | Non-Inductive Amps:   | 15 (10) A  | 10 (10) A            | 10 (10) A            |
|                                     | Pilot Duty:   | 125 VA @ 24 VAC (N.O.), 120/240 VAC (N.O./N.C.)<br>50 VA @ 24 VAC (N.C.) |                      |                      |
| Control Ambient Temperature         | Operating   | -30 to 140°F (-34 to 60°C)   |                      |                      |
|                                     | Shipping  | -40 to 185°F (-40 to 85°C)   |                      |                      |
| Ambient Humidity                    | 0 to 95% RH Non-condensing; Max. Dew Point: 85°F (29°C)   |  |                      |                      |
| Control Material Case and Cover     | NEMA 1 High Impact LEXAN 950% Plastic   |  |                      |                      |
| Agency Listings                     | UL Listed: File E27734, Guide XAPX<br>(Temperature Indicating and Regulating Equipment)<br>CSA Certified: File LR948, Class 4813 02 |  |                      |                      |

Figure 6.1



6-6



| DWG   | DSG | DWG               | REV DATE | REV       |
|---|-----|-------------------|----------|-----------|
| <b>REVISIONS</b>  |     |                   |          |           |
| REDRAWN FROM "B" SIZE AND RATINGS & DIM'S REVISED TO CURRENT PRODUCTION STANDARDS |     |                   |          |           |
| VT  | VT  | DTF               | 25OCT80  | C         |
| REVISED RANCE & DIFT SOWEVS TO SOLANGE HEADED.                                    |     |                   |          |           |
| DELETED NOTE I  |     |                   |          |           |
| VT  | VT  | HAI               | 16JAN86  | D         |
| NOTES:  |     |                   |          |           |
| <b>RANCO</b><br>CONTROLS DIVISION   |     |                   |          |           |
|   |     |                   |          |           |
| FORM NO. 000  |     | DATE OF ISSUE 019 |          | BY WHI VT |
| FORM NO. 000  |     | DATE OF ISSUE 019 |          | BY WHI VT |
| OUTLINE DIMENSION DRAWING<br>TYPE 010 CONTROL AUTO RESET-<br>LOW PRESSURE         |     |                   |          |           |
| C   |     | 010-001           |          |           |

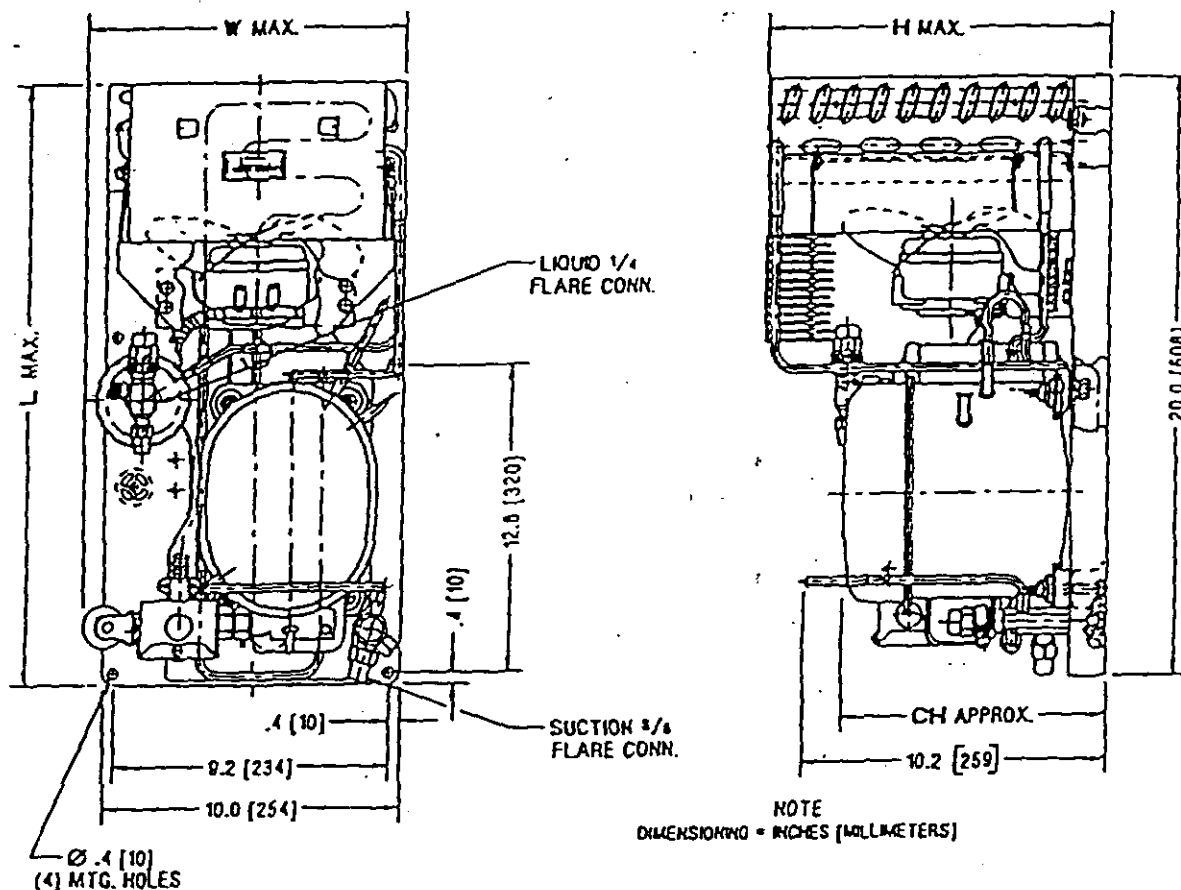




# TECUMSEH HERMETIC CONDENSATE EVAPORATIVE CONDENSING UNITS

Date: 9-12-4

MODEL AEA9422ZXAEC (Formerly EE9422ZC) R-404A 1/3 HP AIR COOLED



| Model        | Dimensions |      |      |     | *Line Connection |       | Pumpdown<br>90 ° F<br>90% Full | Air<br>CFM | Oil Chg<br>oz. | Gr. Wt.<br>Lbs. |
|--------------|------------|------|------|-----|------------------|-------|--------------------------------|------------|----------------|-----------------|
|              | L          | W    | H    | CH  | Suct.            | Liq.  |                                |            |                |                 |
| AEA9422ZXAEC | 20.0       | 10.7 | 11.5 | 8.9 | 3/8 S            | 1/4 F | 2.5                            | 280        | 10             | 99              |

\*F=Flare, S=Solder, RF or RS= Rotolock Valve with Flare or Solder Connections  
Factory charge: 20 psig dry air - MUST BE EVACUATED

| Approved Evap. Range |      | Performance Data @ 90°F Ambient |       |      |               |
|----------------------|------|---------------------------------|-------|------|---------------|
| °F                   | PSIG | BTU/HR                          | Watts | Head | Evap. Oz./Hr. |
| -10                  | 23.9 | 1240                            | 415   | 260  | 12.7          |
| 0                    | 32.8 | 1540                            | 460   | 280  | 13.7          |
| 10                   | 43.3 | 1860                            | 525   | 300  | 15.7          |
| 20                   | 55.5 | 2200                            | 590   | 320  | 16.6          |
| 30                   | 69.5 | 2570                            | 665   | 345  | 17.7          |
| 45                   | 94.3 | 3220                            | 780   | 390  | 20.8          |

20°F return gas temp. max. superheat above 20°F evap., 40°F max. below 20°F evap., 5°F subcooling.  
Oz./Hr. is water evaporation rate at specific evap. temp., 70% relative humidity. BTU/HR is rated with dry pan.

Figure 6.3





## CHAPTER 7

### PARTS LIST

#### 7.1 *Introduction*

This section of the manual contains lists of replaceable parts. Each of the tables contain a list of removable parts associated with an assembly of the cabinet or refrigeration system. No parts identification has been provided for details of permanently assembled items or those items that are not suitable for field repair.

#### 7.2 *Source Codes*

The sources for some items are shown in the part tabulation. Where no individual source code is listed, the part is available through Cospolich Refrigerator Co., Inc., Norco, LA 70079. (Fed. Mfg. Code #66682)



|                               |
|-------------------------------|
| TABLE 7.1 VENDOR SOURCE CODES |
|-------------------------------|

| Code No. | Name                                 | Address                   |
|----------|--------------------------------------|---------------------------|
| 14852    | Bohn Heat Transfer                   | Danville, IL 61932        |
| 32761    | Kason Industries                     | Shenandoah, GA 30265      |
| 50992    | Ranco Control 5                      | St. Louis, MO 63143       |
| 78462    | Sporlan Valve                        | St. Louis, MO 63143       |
| 14569    | Copeland Corporation                 | Sidney, OH 45365-0669     |
| 17529    | Watsco                               | Hialeah, FL 33010         |
| 59431    | Tecumseh Products                    | Tecumseh, MI 49286        |
| 49048    | Miljoco Corporation                  | Eastpointe, MI 48021      |
| 45020    | Nashville Wire Products              | Nashville, TN 37202-0491  |
| 79264    | Jean's Extrusions, Inc.              | Salem, IN 47167           |
| 2K223    | Refrigeration Hardware               | Sun Valley, CA 91353-1549 |
| 87518    | Standard Keil, Inc.                  | Allenwood, NJ 08720       |
| 60886    | Idec Corp.                           | Sunnyvale, CA 94089-2211  |
| 19220    | Eberhard, Inc.                       | Cleveland, OH 44136-9712  |
| 66682    | Cospolich Refrigerator Company, Inc. | Norco, LA 70079           |



| 7.2.1 Parts List - Cabinet<br>THW30-2M-SN-MLR       |            |                 |                  |     |
|---|------------|-----------------|------------------|-----|
| Item  | Cosp #     | Mfg #           | Vendor           | Qty |
| Latch   | HXLH10     | 3-3972-SSU      | Eberhard         | 2   |
| Strike  | HXLH11     | 930-C           | Kason            | 2   |
| Hinge   | HXHE02     | 217             | Kason            | 6   |
| Thermometer   | RWTM03     | 1759602         | Milijoco         | 1   |
| Pilaster #1   | -          | -               | -                | -   |
| Pilaster #2   | -          | -               | -                | -   |
| Pilaster Clip                                       | -          | -               | -                | -   |
| Shelves #1  | SSN32AX20B | -               | Cospolich        | 6   |
| Shelves #2  | -          | -               | -                | -   |
| Gasket #1   | TGA60MV    | -               | Cospolich        | 2   |
| Gasket #2   | -          | -               | -                | -   |
| Mullion Heater #1                                   | L1HR178    | -               | Cospolich        | 1   |
| Mullion Heater #2                                   | -          | -               | -                | -   |
| Breaker Kit #1                                      | TBA60S2    | -               | Cospolich        | 1   |
| Breaker Kit #2                                      | -          | -               | -                | -   |
| Light Switch  | -          | -               | -                | -   |
| Light Guard   | -          | -               | -                | -   |
| Light Socket  | -          | -               | -                | -   |
| Light Bulb  | -          | -               | -                | -   |
| 7.2.2 Parts List - Refrigeration<br>THW30-2M-SN-MLR |            |                 |                  |     |
| Item  | Cosp #     | Mfg #           | Vendor           | Qty |
| Evaporator Coil                                     | RWE031     | TA17 Coil       | Heatcraft        | 1   |
| Evaporator Motor                                    | LWEM18     | JA2N256N        | Magnetek         | 2   |
| Evaporator Fan #1                                   | RWFB01     | 6-4609          | Cospolich        | 1   |
| Evaporator Fan #2                                   | RWFB02     | 6-4610          | Cospolich        | 1   |
| Expansion Valve                                     | RWEV14     | FV 1/4 C        | Sporlan          | 1   |
| Thermostat  | RWTT08     | A319ABC-24-01   | Johnson Controls | 1   |
| Condensing Unit                                     | RUT220     | AEA9422ZZAEC    | Tecumseh         | 1   |
| Compressor  | RUT221     | AEA590AT-946-A2 | Tecumseh         | 1   |
| Condenser   | RWCD17     | 50837           | Tecumseh         | 1   |
| Condenser Fan Blade                                 | RWFB20     | 51561           | Tecumseh         | 1   |
| Condenser Fan Motor                                 | RWCM05     | 810M006B45      | Tecumseh         | 1   |
| Receiver  | RWRT04     | 51080           | Tecumseh         | 1   |
| Start Capacitor                                     | RWCP42     | 858S165A47      | Tecumseh         | 1   |
| Run Capacitor                                       | -          | -               | -                | -   |
| Relay   | RWRLY09    | 820RR12B79      | Tecumseh         | 1   |
| Overload  | RWOVL05    | 8300MRTE59      | Tecumseh         | 1   |
| Filter Dryer  | RWFD02     | C-052-S         | Sporlan          | 1   |
| Sight Glass   | RWSG01     | SG-114          | Watsco           | 1   |
| Pressure Control                                    | RWPL02     | 010-1483        | Ranco            | 1   |
| Power Control Switch                                | PASW01     | -               | Cospolich        | 1   |
| Terminal Box Assy                                   | RCTL31     | -               | Cospolich        | 1   |



|   |
|---|
| <p><b>TABLE 7.2.3 PARTS LIST</b></p> <p><b>SPECIAL TOOLS LIST</b></p> |
|---|

| Part #  | Description                              | Quantity     |
|---------|--|--------------|
| R141212 | Refrigerant service gauges<br>with hoses | 1            |
| VA70264 | Valve Service Wrench<br>Refrigerant      | 1<br>30 lbs. |





## CHAPTER 8

### INSTALLATION

#### 8.1 Unpacking

**Note:** Before unpacking unit, note any crating markings and check for damage to crating and notify the carrier if there should appear to be damage to the equipment.

The unit is shipped from the factory securely fastened to a single shipping pallet protected by an external wrapping

- a. Carefully remove all external wrappings and other protective coverings.
- b. Review the installation section of the manual completely prior to installation.
- c. Discard crating materials.

#### 8.2 Installation

- a. Before moving the unit to the installation sight, double-check passageways to make certain that it will move through without modifications.

**Note:** In certain instances, it may be necessary to remove the doors and hardware to negotiate tight spaces.

- b. On most shipboard applications, a permanent base is fabricated by the ship builder to accommodate the base frame of the unit. *Once the cabinet has been attached to the ship's foundation, it is necessary to apply a silicone sealant around the complete perimeter at the point that the cabinet base contacts the foundation.*
- c. Position the unit to allow sufficient ventilation. usually leave a 3" clearance from adjacent bulkheads and other equipment. Try not to place the unit near heat producing items such as ovens, ranges, and furnaces.
- d. Level the cabinet from front to back and from side to side. This is important so that when securing to the deck base, the cabinet will not be pulled out of square.
- e. Evaporator coil drain lines are factory-installed and are tied into a condensate evaporator that eliminates the need for exterior plumbing. Check to make certain that the drain line is located inside the condensate evaporator pan. On units with remote refrigeration, the condensate evaporator pan is optional.



- f. Check the door gaskets to make certain that they are sealing properly to the cabinet. It is necessary to adjust the latch strike inward to compensate for the compression of the gaskets with age.
6. Before applying electrical power to the unit, you should first check the electrical characteristics of the condensing unit and make certain that they agree with those of the electrical supply source.

**CAUTION: LOW OR EXCESSIVE VOLTAGE CAN SEVERELY DAMAGE  
THE ELECTRICAL SYSTEM.**

*Note:* It is not necessary to adjust any valves or controls on the system as this



## CHAPTER 9

### ELECTRICAL AND MECHANICAL

#### 9.1 *Introduction*

This section of the manual contains drawings and schematics of the electrical and piping systems.

#### 9.2 *Electrical Terminology and Abbreviations*

##### *Definitions*

*RLA* - Rated load amps

Rated load amps is a measure of the current drawn by a compressor when operated at compressor manufacturer rating conditions at nominal voltage. This value is listed at U.L. and C.S.A. as "*RLA*." It is in agreement with the N.E.C. definition that the RLA be the current draw when the compressor is delivering rated output.

*LRA* - Locked rotor amps

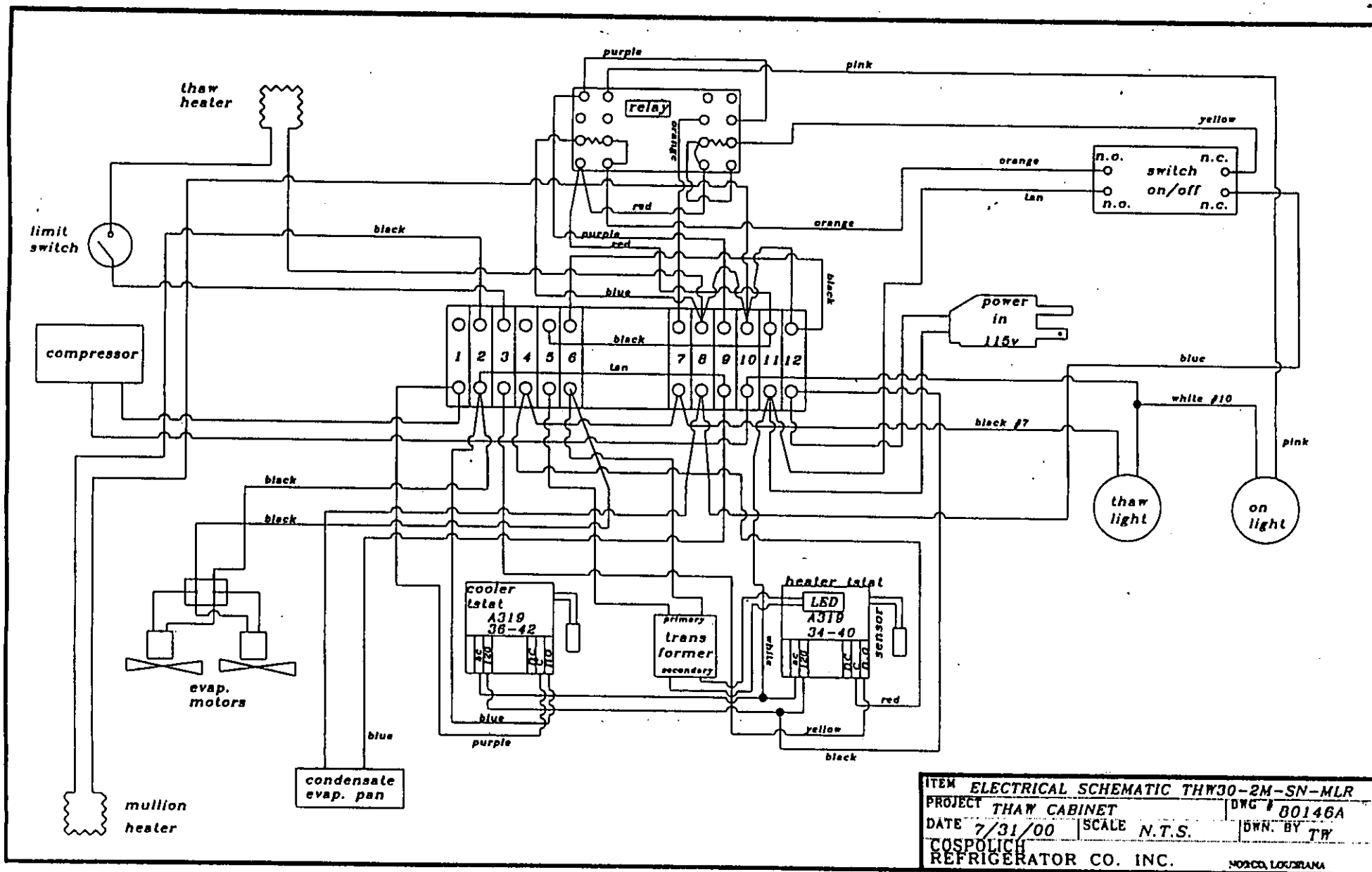
Locked rotor amps of a compressor is the current value recorded three seconds after rated voltage is applied under locked rotor conditions from a 75-degree F motor soakout temperature. (Voltage drop to be predetermined and adjusted accordingly before test.) This value appears on the compressor serial plate and on all compressor statistics sheets.

It may be well to note that the practice in the past was to show an additional column marked, LRA "U.L. Test Report." This is no longer needed, since the U.L. investigation work, as regards component rating, will be guided by the compressor manufacturer's published value.

*MCG* - Maximum continuous current

Maximum continuous current is a limiting ampere value that must not be greater than 156% of the rated load amps (RLA) of the compressor as marked on the nameplate of the particular unit into which that compressor is applied.









|                               |
|-------------------------------|
| TABLE 9.1 OPERATING PRESSURES |
|-------------------------------|

**R-12**

| <i>Cabinet</i>      | <i>Ambient</i> | <i>Suction Pressure</i> | <i>Head Pressure</i> |
|---------------------|----------------|-------------------------|----------------------|
| -5 Degrees F (Fre.) | 90 Degrees F   | 0-10 lbs.               | 120-150 lbs.         |
| 37 Degrees F (Ref.) | 90 Degrees F   | 18-35 lbs.              | 120-150 lbs.         |

**R-22**

| <i>Cabinet</i>      | <i>Ambient</i> | <i>Suction Pressure</i> | <i>Head Pressure</i> |
|---------------------|----------------|-------------------------|----------------------|
| -5 Degrees F (Fre.) | 90 Degrees F   | 10-15 lbs.              | 200-250 lbs.         |
| 37 Degrees F (Ref.) | 90 Degrees F   | 37-67 lbs.              | 200-250 lbs.         |

**134A**

| <i>Cabinet</i>    | <i>Ambient</i> | <i>Suction Pressure</i> | <i>Head Pressure</i> |
|-------------------|----------------|-------------------------|----------------------|
| -5 Degrees (Fre.) | 90 Degrees     | -5-10 lbs.              | 120-150 lbs.         |
| 37 Degrees (Ref.) | 90 Degrees     | 16-37 lbs.              | 120-150 lbs.         |

**404A**

| <i>Cabinet</i>      | <i>Ambient</i> | <i>Suction Pressure</i> | <i>Head Pressure</i> |
|---------------------|----------------|-------------------------|----------------------|
| -5 Degrees F (Fre.) | 90 Degrees F   | 15-20 lbs.              | 250-300 lbs.         |
| 37 Degrees F (Ref.) | 90 Degrees F   | 68-84 lbs.              | 250-300 lbs.         |



## CHAPTER 10

### LIMITED WARRANTY

**Cospolich** warrants their cabinets to consumers only against defects in material or workmanship under normal use and service for a period of one year from the date of shipment. We will repair or replace at our option, any part, assembly or portion thereof which **Cospolich's** examination discloses to be defective. **Cospolich** will pay the labor costs for the repair up to twelve (12) months from date of shipment.

#### *Terms*

##### *Exclusions*

**Cospolich's** obligations under this warranty shall not extend to any malfunction or other problem caused by unreasonable use, such as but not limited to, improper setting of controls, improper installation, improper voltage supply, loose electrical connections or blown fuses, and damage not attributable to a defect in workmanship. This warranty shall not apply to any cabinet or component part that has been subject to any accident, alteration, abuse, misuse to any damage caused in fire, flood, or other acts of God and to any product that has been serviced by an unauthorized service person or company.

##### *To Secure Warranty Service*

If you claim a defect under this warranty, direct your claim to whom you purchased the product, giving model, serial and code numbers with a description of the problem.

If the above procedure fails to satisfy your claim, you may write directly to the **Director of Customer Relations, Cospolich Refrigerator Co., Inc, P.O. Box 1206, Destrehan, La. 70047** listing the above.

There is no other express warranty on the **Cospolich** units except as stated herein. Any implied warrants of fitness and merchantability are limited in duration to the duration of this warranty. The liabilities of **Cospolich** are limited solely and exclusively to replacement as stated herein and do not include any liability for any incidental, consequential, or other damages of any kind whatsoever, whether any claim is based upon theories of contract negligence or tort. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion of limitations of incidental or consequential damages. So the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.



***ASSEMBLY AND INSTALLATION  
INSTRUCTIONS***

***Modular Thaw Cabinet  
Model THW30-2M-SN-MLR***

***Manufactured By:  
Cospolich Refrigerator Co., Inc.  
Norco, LA 70079  
800-423-7761***



## **ASSEMBLY AND INSTALLATION INSTRUCTIONS**

**Item:** Modular Thaw Cabinet  
THW30-2M-SN-MLR

**Scope:** These instructions were prepared to assist in the assembly and installation of the Cospolich Modular Thaw Cabinet as listed on the cover sheet. Should any questions arise regarding the assembly, it is suggested that the factory be contacted.

### **Tools Required:**

1. Panel Lock Wrench (Enclosed)
2. 8" Adjustable Wrenches (2)
3. Standard Screwdriver
4. Caulking Gun
5. 3/8" Socket and Ratchet
6. 1/4" Nut Driver
7. Phillips Screwdriver
8. 3/4" Open End Wrenches (2)

### **Uncrating:**

1. Remove all wrappings and packaging materials.
2. Inspect refrigerator cabinet to make certain that there is no damage.

**Notice:** Visually inspect the complete cabinet. Before installation, run the unit for 24 hours. Should it not achieve temperature or should the cabinet arrive in less than proper order, contact the Cospolich Service Department immediately at (800) 423-7761 or (504) 469-6555.

**Failure to pretest and inspect may affect the equipment warranty.**





### ***Disassembly:***

1. Take from inside the cabinet the shelves, breaker strips, and the box of components.
2. *Doors:* Remove each door. To do this, use a flat screwdriver and pop off the side hinge covers. Use a Phillips screwdriver and remove the hinge screws which attach it to the cabinet.

Two people are required to perform this step. When the door(s) are removed, place them safely out of the way.

Mark doors to make certain they are reinstalled in the correct place.

3. *Tubing Covers:* Using a 1/4" nut driver, remove the stainless steel hex screws which secure the rear tubing covers. There are two tubing covers.
4. *Louvered Grills:* Remove the ventilation grills on the front and rear of the cabinet by lifting it up about 1/2", pulling the bottom out and dropping it down.
5. *Air Handler Electrical:* Locate the air handler on the back wall on the cabinet. Using a 5/16" socket wrench, remove the upper right and lower fasteners.
  - a. *Sensors:* Remove the sensor cover (see illustration 2) and pull the sensor leads through the rear wall penetration.
  - b. Next, replace the fasteners in the air handler door.
  - c. *Fan Harness:* Find the electrical line in the rear of the cabinet tagged "Fan Harness." Disconnect it from the other lead (see illustration 4.)
6. *Refrigeration Lines:* Find the tag in the rear of the cabinet indicating the quick connect fittings on the refrigeration lines. Remove the insulation covering and using the wrenches furnished, loosen the fitting (see illustrations 5 & 6.) Make certain to use two wrenches and to continue the uncoupling process quickly to limit the refrigerant lines.
7. *Removing Condensing Unit:* Using the 5/16" socket and ratchet, loosen and remove the mounting bolt located just below the condenser. This will allow the condensing unit to slide out of the compartment. Find the electrical lead to the condensing unit and disconnect it from the electrical control panel (illustration 7.)



8. *Precharged Refrigerant Lines:* The refrigerant line set has self-sealing fittings on the ends. Using wrenches, loosen and remove the fittings from those locations. Once fittings are disconnected, carefully remove the line set and place it out of the way. The affected fittings are appropriately tagged.

9. *Disassembling the Cabinet:*

- a. *Top:* Begin in the inside front left corner. Using the hex wrench provided, insert it into the cam and turn clockwise until the cam opens, approximately a half turn. Continue to the rear, then across the back and up to the front. All cams at this point should be released. With this pick done, pick the top directly up and remove.

**Important:** The foam tracking which the cams are located in, must not be dented, torn or damaged. Make certain To take particular care in handling.

- b. *Left End:* Loosen the bottom cams beginning in the front. With this done, have someone to support the end while the cams are released. With all cams released, have two installers remove and safely store the panel.
- c. *Right End:* With an installer supporting the back and another the right end, unfasten the cams on the bottom of the end, then the back. Remove panel and store safely.
- d. *Back:* With an installer supporting the back, release the three cams at the bottom.

Because of the additional electrical and with the air handler being attached, care should be taken in the transport and storage of the panel until needed.

- e. *Base:* Disassembly is complete. Make certain before moving, that there are no loose lines or components that may fall during transport to the assembly area.

**Note:** At this time it may be advisable to familiarize yourself with all of the components and equipment. The alignment of all panels is critical and the tight quarters in the galley area will add a degree of difficulty to reassembly.



10. *Transferring Components for Reassembly:*

- a. The utmost care should be taken when transferring the components to the assembly area. Do not allow the perimeter foam edge of the panel to be dented or torn, as this will affect the seal of the walls.
- b. Particular care should be taken in handling and moving the components as not to scratch or damage the panels.

11. *Positioning Components For Reassembly:*

- a. Since the working area will be quite limited, it is suggested that except for the bottom, the components should be safely placed in an adjacent area for easy access as needed.
- b. The assembly of the unit can be accomplished in the exact spot that the unit will be operating. This is providing that there is a minimum of 2" clearance in the rear and top for installation.
- c. The base, which is the first component needed to begin the assembly process, should be placed in the position that the unit is to be assembled.

12. *Assembly Information:*

- a. *Work Space:* It is suggested that there be 3 inches of clearance on the sides, back and top to allow for ease in installing.
- b. *Caulking:* A silicone caulking is furnished. It is to be applied along the stainless steel flanges for sealing.
- c. *Camlock Hook Position:* When preparing to attach one panel to another, make certain that the camlocks are in a fully extended position.

**Note:** When the cam hook is fully extended, it should be approximately 1 ½" from the top of the hook to the highest point of the hardrail.

13. *Base Foundation:*

**Important:** Prior to assembly of the unit, it must be determined and assured that the area where the cabinet is to be installed is acceptable for receiving the unit.



- a. A strong and level foundation is essential to successfully installing the cabinet.

Any imperfection in the foundation will limit the quality of the finished product.

- b. *Recommendation on the Foundation:*

1. The structural material which makes up the foundation must be capable of supporting the cabinet without deflection or movement of any type.
2. The foundation must support the cabinet around the total perimeter.
3. The foundation should be perfectly level since the cabinet will take on the shape of it.
4. It is recommended that there be at least four attachment points of the cabinet base to the vessel's foundation.

#### 14. *Cabinet Assembly Process:*

- a. *Base:* Place the base on the permanent foundation or in the general area of the equipment's final installation. Using the silicone sealant furnished, place three 1/4" beads on the rear rail as shown on the illustration (illustration 8.)

Install silicone just prior to assembling the rear panel.

- b. *Back Panels:* With the cams fully extended, place the first back panel into position on the base. When in position, insert cam wrench and draw them closed by turning them in a clockwise direction.
- c. *Right End:* First, lay beads of silicone caulking right bottom and along the right edge of the back panel. Fully extend the cams. Place the panel into position. Start by reattaching the cams rear forward, then bottom to top.

**Note:** It is important to pay particular attention that all components are matching correctly and that the seams are closed tightly.

- d. *Left End:* Repeat the same procedure as performed on the right end.





- e. *Partition:* Place the partition into position, lock in the bottom then the back.
  - f. *Top:* Prior to installing the top, use the cam wrench to fully extend the cams in the ends and back panels. Apply silicone sealant to top. Place the top into position. Start in the rear right corner and work forward, drawing in the cams. Once to the front, move to the right corner and draw the other cams working from right to left.
- Note:** At this point, again examine the cabinet. It should be square and all seams closed tightly.
- g. *Mullion Heater:* Find the mullion heaters in the front on the base. Untie the heater and place it into the track around the perimeter of the door.
  - h. *Breaker Strip:* With the mullion in place, install the stainless steel breaker strips. When installing, pay particular attention to line the holes up.
  - i. *Doors:* With assistance in holding the door into position, line up the hinge with the hole positions on the cabinet and start the screws. Once all screws are in, tighten each. Carefully close the door, checking the latching assembly to make certain it operates properly. Follow the same process in installing the second door if applicable.

With the doors in place, observe the space between the doors at the top and bottom. This margin must be the same all the way down, if it is not, the cabinet may need to be shimmed.

**Note:** Unless the doors are aligned properly, they will not seal.

The white alignment spacers can now be attached to the strikes on both the top and bottom.

## 15. *Electrical:*

Refer to step 5 and proceed in reverse.

**Note:** Make certain all connections are tight and that none of the wires are pinched.

- 1. Before placing the protective covers into place, it is necessary to first leak check each fitting.



16. *Refrigeration Lines:*

a. *Rear Connection:* Make the connection of the lines exiting the cabinet to the spiral refrigeration line section first. Wrap well, with the tubing insulation provided.

b. *Condensing Units:* Place the condensing units on the deck in front of the cabinet with the condensers facing away from the cabinet. Find the spiral refrigeration lines at the rear and move them forward.

Use the furnished wrenches to make the connections. Place the condensing unit inside of the refrigeration space and bolt down.

Reattach the electrical to the control enclosures.

c. *Precharged Refrigeration Lines:* With the condensing unit and evaporator coil in position, reconnect the precharged tubing lines. Make certain that the 3/8" suction lines are connected to the 3/8" tubing line and do the same for the 1/4" lines. Also, connect the condensing unit cord into the electrical control panel. Slide unit in.

**Note:** Each fitting on the line set is coded similarly to the matching fitting on either the condensing unit or the evaporator coil.

**Suggestion:** To leak check lines, apply a small amount of a leak detecting liquid on the quick connect fittings.

d. *Rear Line Cover:* Install the rear line cover using the #8 x 1/2" hex screws provided.

17. *Drain Line:* In the interior, connect the 1/2" clear vinyl tubing to the bottom line on the evaporator coil. On the other end, there is a copper tube on the end of the drain lines. Place the tube into the condensate evaporator pan in the condensing unit compartment, then replace the drain line covers over the drain lines and secure.

18. *Cam Access Hole Covers:* In the supply package are grey vinyl caps. Snap the caps into the cam access holes to prevent moisture from building in the walls.

**Note:** The thaw cabinet can now be placed in its permanent location after the protective PVC has been removed from the stainless steel.

**Warning:** It is necessary to allow at least 2 1/2" clearance at the rear of the cabinet for ventilation.

19. *Pans and Racks:* Place pan on slide angle with a rack.

20. *System Start Up:* Prior to starting, review operating instructions.



***Final Check List:***

1. With the thaw cabinet in the position, slide the condensing units back out and start the system up. Allow to run five minutes and check the liquid sight glass for bubbles. A clear glass indicates the system is fully charged.

**Note:** When check is complete, turn unit off and slide back into the condensing unit compartment and fasten it down to the mounting clips.

**Note:** Temperature controls are factory set and should *not* be readjusted.

2. Check to make sure the cabinet panels and doors are properly aligned.

**Note:** Provisions for securing the thaw cabinet to the deck or sub base should be made.



**SECTION 2: ALLOWANCE PARTS LISTING**

This section contains the Allowance Parts Listings (APL's) for Modular Shipboard Thaw Cabinet used on LCPL ROY M. WHEAT. The Allowance Parts Listings are maintained and updated in the Ship's Configuration Database (SCD) under RIC number X23068FM930.

The parts contained in the above RIC are included below.

**RIC: X23068FM930 "THAW BOX, COSPOLICH"**

| PART NUMBER     | COMPONENT NOMENCLATURE | UOI | QPA | Cat Code |
|-----------------|------------------------|-----|-----|----------|
| HXLH10          | LATCH                  |     | 1   | CPSP     |
| HXHE02          | HINGE                  |     | 1   | CPSP     |
| RWTM03          | THERMOMETER            | EA  | 1   | CPSP     |
| TGC80MV         | GASKET                 | EA  | 1   | CPSP     |
| LIHR178         | HEATER, MULLION        |     | 1   | CPSP     |
| LRLS01          | LIGHT SWITCH           |     | 1   | CPSP     |
| LRLC01          | LIGHT GUARD            |     | 1   | CPSP     |
| LRSB01          | LIGHT BULB             |     | 1   | CPSP     |
| RWEM18          | EVAPORATOR MOTOR       |     | 1   | CPSP     |
| RWFB01          | EVAPORATOR FAN 1       |     | 1   | CPSP     |
| RWFB02          | EVAPORATOR FAN 2       |     | 1   | CPSP     |
| RWEV14          | EXPANSION VALVE        |     | 1   | CPSP     |
| RWTT08          | THERMOSTAT             | EA  | 1   | CPSP     |
| RUT221          | COMPRESSOR             |     | 1   | CPSP     |
| RWFB20          | COND. FAN BLADE        |     | 1   | CPSP     |
| RWCM05          | COND. FAN MOTOR        |     | 1   | CPSP     |
| RWCP42          | START CAPACITOR        |     | 1   | CPSP     |
| RWRLY09         | RELAY                  |     | 1   | CPSP     |
| RWOVL05         | OVERLOAD               |     | 1   | CPSP     |
| RWFD02          | FILTER DRYER           |     | 1   | CPSP     |
| RWSG01          | SIGHT GLASS            | EA  | 1   | CPSP     |
| RWPL02          | PRESSURE CONTROL       |     | 1   | CPSP     |
| THW30-2M-SN-MLR | THAW BOX               | EA  | 1   | CPSP     |





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